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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,298	11/18/2005	Klaus Rutz	29805.132.3	4353
22859	7590	11/24/2009		
INTELLECTUAL PROPERTY GROUP			EXAMINER	
FREDRIKSON & BYRON, P.A.			STIMPERT, PHILIP PEARL	
200 SOUTH SIXTH STREET, SUITE 4000				
MINNEAPOLIS, MN 55402			ART UNIT	PAPER NUMBER
			3746	
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			11/24/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/554,298

Applicant(s)

RUTZ ET AL.

Examiner

Philip Stimpert

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 7, 12, and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, the examiner does not find support for the limitation in claim 13 of "calculating a currently required rotating speed for the motor base on... only if the current position of the rotating cam corresponds to the compression stroke..." The examiner finds instead that the cited paragraphs indicate that the required speed is calculated regardless of cam position, and also that specific desired speeds are discussed for the aspiration section of the pump cycle in other sections of the specification (for instance, paragraph 44 of the PGPub of the instant application). The phrase, "only if" effectively sets forth a negative limitation which the examiner does not find in the specification. It is therefore unclear how the language recited in claim 13 may be considered supported.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7, 12, and 13 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Regarding claim 13, the claim recites "providing input of a required quantity... the required quantity being that to be delivered during the compression stroke of the metering cycle..." Given that the claim recites a diaphragm driven by a cam as the motive element, and that cams are generally understood to be of constant profile, it appears that the "required quantity" as recited by claim 13 is a fixed quantity resulting from the relative dimensions and placement of the diaphragm, ram, and cam. It is therefore unclear how this can constitute a meaningful input to the calculation step.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7, 12, and 13, as best understood by the examiner, are rejected under 35 U.S.C. 103(a) as being unpatentable over Haberlander et al. (US 6,457,944) in view of Moddemann (US 2002/0067148).
8. Regarding claim 13, Haberlander et al. teach a method for controlling a pump (1, see col. 5, ln. 65-67) including a pump element which may be a diaphragm (col. 2 ln. 27) that is actuated by a ram (2, see col. 5, ln. 50-55) which is powered by an electric motor (3), comprising reciprocating the pumping element by rotation of the cam.

Haberlander teaches that the reciprocation takes place in a first direction for a compression, or pressure, stroke and in a second direction for an aspiration, or suction, stroke. Haberlander et al. also teach providing input of a required quantity, in the form of a pump stroke and a total dosing volume, to a positional controller (8, col. 6, ln. 63 through col. 7 ln. 2, and col. 7, ln. 39-41) that is coupled to a motor controller (4). Haberlander et al. further teach providing input of a current position of the rotating cam (from sensors 11) to the controller (8), calculating a currently required rotating speed based on the position and required quantity (col. 7, ln. 17-41), and transmitting that required speed to the motor controller (4). Haberlander et al. do not specifically teach that the motor is an electronically commutated (EC) motor. However, they do teach that at least frequency and thus rotational rate control is necessary for their method, and realized by their pump. Moddemann teaches an EC motor (2), and teaches that it has position and speed control capabilities (paragraph 15). It is thus apparent to those of ordinary skill in the art that the EC motor of Moddemann could be substituted for the asynchronous motor of Haberlander et al. by known methods of motor installation and control circuit linkage, to achieve the predictable result of an operational metering pump as in the system of Haberlander. Where a claimed improvement on a device or apparatus is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement," the claim is unpatentable under 35 U.S.C. 103(a). Ex Parte Smith, 83 USPQ.2d 1509, 1518-19 (BPAI, 2007) (citing KSR v. Teleflex, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007)). Accordingly Applicant claims a combination that only

unites old elements with no change in the respective functions of those old elements, and the combination of those elements yields predictable results; absent evidence that the modifications necessary to effect the combination of elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a). Ex Parte Smith, 83 USPQ.2d at 1518-19 (BPAI, 2007) (citing KSR, 127 S.Ct. at 1740, 82 USPQ2d at 1396. Accordingly, since the applicant[s] have submitted no persuasive evidence that the combination of the above elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a) because it is no more than the predictable use of prior art elements according to their established functions resulting in the simple substitution of one known element for another. Thus provided, the EC motor of Moddemann would produce rotation of the rotor via a rotating magnetic field as claimed, under the control of the motor controller (9, 10).

9. Regarding claims 7 and 12, Moddemann teaches capturing the position of the motor via an integral rotor position sensor (11). Those of ordinary skill would appreciate that such a position would be directly analogous to the position of the cam of Haberlander et al., since the cam would be directly coupled to the rotor. Further, as Haberlander et al. teach providing position data to the positional controller (8), this implies at least an operational coupling of the positional controller and any position sensor.

***Response to Arguments***

10. Applicant's arguments filed 8 September 2009 have been fully considered but they are not persuasive, in light of the new rejections set forth above.

11. With respect to the argument that "Takahashi do not teach that adjustments to a speed of the motor be limited to a particular stroke of either of the plungers," the examiner notes that this does not appear to be required by the current claims. The claim requires only that the speed be calculated, not that it change from a previous value, or change within a given stroke.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Stimpert whose telephone number is (571)270-1890. The examiner can normally be reached on Mon-Fri 7:30AM-4:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746

/P. S./  
Examiner, Art Unit 3746  
20 November 2009